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ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

MOTIVATING MANAGEMENT TO TIGHTEN QUALITY CONTROL

Moscow EKONOMICHESKIYE NAUKI in Russian No 2, Feb 81 pp 104-113

[Article by Docent and Candidate of Economic Sciences Ya. Kotlikov: "The Orientation of the Economic Mechanism at Raising Product Quality"]

[Text] In a mature socialist society, a systematic rise in the quality of the produced product is an indispensable condition for national economic development. This derives from the economic and social significance of product quality and from its active effect on improving the living conditions of the Soviet people and on the basic factors which determine the efficiency of social production. Moreover, with the intensification of production which is characteristic for the present stage of development for our nation, the growing satisfaction of social demands is provided not only by increasing the volume of consumer valuables but chiefly by improving the quality of the produced products. The designated aspects which determine the necessity of a constant rise in product quality naturally do not exhaust the entire diversity of them. However even these aspects alone, in encompassing the most important sides of the problem, convincingly show that systematic work in this area meets the fundamental economic interests of a socialist society. Precisely this explains the constant attention of the CPSU and the Soviet government to increasing the quality of the produced products. The Draft of the CPSU Central Committee to the 26th Party Congress "Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" states: "To significantly improve the quality of all types of produced products and to broaden and renew the assortment of articles in accord with the current requirements of national economic development and scientific-technical progress as well as with the growing needs of the population. To continuously increase the proportional amount of superior quality products in the total volume of product output. To introduce everywhere integrated product quality control systems."[1]

A solution to many of the pressing organizational and economic problems related to strengthening the incentive of the production associations (enterprises) to produce high-quality articles is to be found in the Decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Effect of the Economic Mechanism on Production Efficiency and Work Quality" of 12 July 1979. One of the characteristic traits of this exceptionally important document is that here provision is made for a range of measures which strengthen the orientation of the economic mechanism on improving product quality.

Improving the Product Quality Control System

The creation of a product quality control system which is adequate to the production relations of mature socialism is among the urgent economic problems. Its solution presupposes a further improvement in the planning of product quality, standardization, certification, the expert evaluation of new articles and their testing, the improving of economic incentive methods for the collectives of the production associations (enterprises), material and moral incentives for the employees and so forth. An important component part of the problem is to ensure high-quality labor by all the workers employed in the national economy. Thus, product quality control encompasses a significant range of questions and has an interdisciplinary nature.

The improving of control systems at enterprises, associations and in the production sectors is directly linked to an improvement in the current and long-range planning of product quality. Such planning presupposes the setting of interrelated quotas for the development and production of articles with finer technical and economic parameters and capable of more fully satisfying the needs of the national economy, the domestic and foreign markets as well as ensuring the required social and economic effects.

Up to the present the nation has developed a rather precise system of planning product quality in employing both differentiated (uniform and comprehensive) and generalizing indicators. However it must be considered that it is more difficult to plan product quality than it is the production volume. This is explained by the fact that in addition to the specific manufacturing features which determine the sectorial differences in planning production activities, it is essential to take into account the particular features and properties of the produced articles, the economic and social advisability, the conditions of their use and a number of other specific factors. Also of important significance is determining the optimum quality level which will ensure the greatest conformity between the article and the demands and the maximum national economic effectiveness. In addition to this, the planning of product quality should also include requirements on safety measures, environmental conservation and so forth.

A high quality of products is ensured in all stages of their production. Consequently, quality planning should encompass the following: The designing of new articles which meet the highest achievements of science and technology; developing and increasing the production of progressive products the quality of which is higher than the best world models or meets them; replacing or reducing the output of obsolete product types; the preparation of products for state quality certification; a constant improvement in their quality indicators on a basis of improving the designs of individual assemblies and parts and the use of efficient materials; increasing the technical level of production by employing advanced equipment, progressive production processes and so forth.

Planning for all the stages of the existence of products should be organically linked to the plans for improving quality within the national economy, the sectors and the enterprises and associations. Naturally, on each of the indicated management levels, product quality planning has its particular features. The national economic plan envisages quotas for the improvement of product quality for all industrial sectors. The State Plan for the Development of the USSR National Economy

for 1976-1980 for the first time set for the ministries as well as for the Union republics (when it was a question of republic-level enterprises) specific quotas for increasing the proportional amount of superior-quality product in the total production volume. Such a procedure was reinforced by the Decree of the CPSU Central Committee and USSR Council of Ministers of 12 July 1979 and spelled out in detail in the "Procedural Instructions on the Procedure for Planning and Accounting for the Growth of Production for Superior-Quality Products (Basic Provisions)" as approved by the USSR Gosplan, the GKNT [State Committee for Science and Technology] and the USSR TsSU [Central Statistical Administration] of 12 August 1979. According to these documents, the five-year economic and social development plans would set for the industrial ministries quotas (broken down for the years) for a rise in the production of superior-quality products and other product quality indicators set for the given sector. In the annual economic and social development plans, the industrial ministries independently were to establish a proportional amount of superior-quality product proceeding from the quotas of the five-year plan for the appropriate year. The industrial ministries in the five-year and annual plans should set for the associations and enterprises an indicator for the proportional amount of superior-quality product (that is, a certain percentage of it) in the total product production volume and give them calculated planning indicators for the production volume of superior-quality product (in comparable prices). Thus, a precise procedure was to be set for planning the output of superior-quality articles.

In the plans worked out in the sectors for improving product quality, quotas were to be set for the following: for the development and production of new articles which surpass the level of the best Soviet or foreign models or meet this; for increasing the quantity and proportionate amount of articles certified with the state Quality Mark; for replacing, taking out of production or modernizing obsolete articles in the second quality category and so forth. In the sectorial plans, the quotas for improving the technical and economic parameters of the articles are coordinated with the supplying of the necessary resources for these quotas. For this purpose the ministries and departments envisage measures for the development of scientific research and design work, for introducing progressive production processes, for increasing the technical equipping of control and testing operations at the enterprises, for supplying them with high-quality raw products and materials and for receiving sufficiently up-to-date technical and economic information.

As for the plans for improving product quality at the enterprises and associations, here the central place is given to the five-year plan. Proceeding from it, the current annual plan is drawn up and this is then adjusted for the months and the specific executors, that is, the shops and the departments of the plant administration. The plans for improving product quality worked out at the enterprises themselves provide measures which ensure the fulfillment of the quotas set by superior organizations. Such measures involve the following: The basic design and production work; the demands made on the suppliers for improving the quality of preassembled articles and materials; measures to ensure strict observance of production discipline and to reduce the labor and material intensiveness of the articles; the organizing of ties with consumers; studying the experience of operating the articles. In addition, the plans of the enterprises and associations also provide measures to create and introduce an integrated product quality control system, if this was not introduced beforehand.

The comprehensive product quality control system (KS UKP) at an enterprise (association) was first created and introduced in the economic organizations of L'vovskaya Oblast. This sytem was approved by the CPSU Central Committee. The experience of product quality control acquired at the enterprises of L'vovskaya Oblast has shown that the principles established in the KS UPK can be extended to other aspects of production in order to more fully utilize the existing reserves for increasing production efficiency and work quality. In this regard particular attention should be given to the experience of the integrated improvement of production control at the enterprises of Dnepropetrovskaya Oblast and Krasnodarskiy Kray. This was also approved by the CPSU Central Committee.

The enterprises of Dnepropetrovskaya Oblast employ a system for controlling product quality and the efficient use of resources. All the measures envisaged by this system are aimed at improving product quality and increasing the production volume of superior-quality articles through the efficient use of the labor, material and financial resources. At the enterprises of Krasnodarskiy Kray, proceeding from the basic principles of the KS UKP, a comprehensive system has been worked out for improving production efficiency.

It has been recommended that the ministries, departments and all party organizations study and widely disseminate this experience. At the end of 1980, more than 15,000 industrial associations and enterprises had already introduced the KS UKP. Analysis has shown that this system ensures a significant improvement in product quality. The proportional amount of superior quality products in the total production volume at the enterprises which introduced the KS UKP is 1.5-2.0-fold higher than at enterprises not using this system; at the same time the losses from rejected products were 2-4-fold less. The time for developing and introducing new equipment was also significantly shortened.[2]

Thus, the theory and practice which have developed up to the present for the planning of product quality mark a new step in developing socialist planning methods. This, naturally, does not mean that they do not require improving. The Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 provides measures to further improve the planning of product quality. Thus, on a basis of the broad use of scientifically based technical and economic indicators making it possible to consider the efficiency, quality and consumer properties of the product, the necessary changes are being made in the system of physical indicators for the produced product (for metallurgy, machine building and other industrial sectors). The Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 provided a fuller responsibility for product quality on the intersectorial management level. It was established that responsibility for satisfying the demand of the national economy and the public for products of the necessary assortment and quality is borne by the ministry which is the head one in producing the given product. The same decree establishes that in the event of a discrepancy in the plans for improving product quality and the means necessary for carrying them out, the USSR Gosbank and the USSR Stroybank can extend credit to the production associations (enterprises) and organizations for carrying out measures related to the output of new products and improving the quality of traditionally produced ones.

This entire system of measures envisaged in the Decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the

Effect of the Economic Mechanism on Raising Production Efficiency and Work Quality" contributes to the greater soundness of planning and to strengthening its effect on improving the product quality control system.

Increasing the Role of Standards and State Certification of Product Quality

The broad use of standardization holds a central place in the system of measures related to product quality control. For the present we possess no other, so powerful lever by which it would be possible in a short period of time and with the least expenditures of social labor to bring about a rise in product quality at all enterprises of our nation. All the ways of product quality control, including the technical, organizational, economic and legal ones, are most directly linked to standardization. It is essential to stress that this has assumed particular significance under the conditions of the dominance of public ownership of the means of production. Here standardization has such specific features as a planned basis, dynamicness, a directive, legislative nature. This greatly broadens the opportunities of its use in the various spheres of production activity.

Such great significance of standardization in improving product quality has been determined by the organizational opportunities contained in it for directly influencing the entire "science--production--distribution--consumption" cycle. On the basis of the best achievements of Soviet and foreign enterprises, the standards establish progressive quality indicators, they correlate the demands on raw products, materials, preassembled articles and finished products, they set uniform methods of testing and inspection, and provide for a reduction in the irrational diversity of types, grades and sizes of products. In this manner standardization ensures a conformity between the demands made on quality by the consumers and the possibilities of embodying them with the given level of development for the productive forces. At the same time it encourages the removal of obsolete articles from production and the use of the most recent scientific and technical achievements.

Our nation has a State Standardization System (GSS). Its creation was brought about by the tasks of a more effective influence on accelerating the rate of scientific and technical progress, deepening the specialization of the sectors of social production, by the broadening of cooperation, by the greater volume of work relating to national and international standardization, by the greater demands on the quality of the standards as well as by a number of other circumstances. The GSS is aimed at solving major national economic problems in the area of improving the organization and management of the national economy, including product quality control, in the area of production specialization, the unifying of its material factors, the improving of safety procedures and environmental conservation.

The important role of standards in product quality control places exceptionally high demands on them. The Draft of the CPSU Central Committee to the 26th Party Congress "Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" emphasizes: "to improve standards and technical conditions for finished products, preassembled articles, materials and raw products in accord with the demands of the consumers."[3] An improvement in standards presupposes, in particular, their systematic replacement. According to the current provisions, standards should be revised at least once every 5 years. Regular revisions provide an opportunity for the standards to reflect the most

recent scientific and technical achievements and establish the quality indicators in accord with the needs of the national economy. Since the production of articles with the best technical and economic parameters is possible only on a basis of more advanced production facilities, increased demands are essential for the quality of the employed machines and equipment, raw products and materials, production methods and organization. For this reason, the plans for introducing new standards should be organically correlated to the plans for capital investments, the reconstruction of enterprises and the modernization of production as well as to the growth of the scientific and technical level. Here of fundamental significance is the revision designated by the Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 for obsolete standards for machinery and equipment. Along with other quality characteristics, the new standards should include demands which ensure a reduction in the weight of the products, lower consumption of fuel and energy in the process of operating them, as well as the unifying of parts, assemblies and instruments. In carrying out the designated requirements, it is essential to strengthen over 800 State Standards and over 1,000 related sectorial standards and technical conditions in which the designated requirements are either not reflected at all or are not sufficiently high.

The broadening of work in the area of comprehensive standardization is promising for coordinating the standards for end products, raw products, materials, semifinished goods, preassembled articles, as well as for production fittings, tools, equipment, inspection and testing methods, and operating and repair rules. This makes it possible to produce products with an optimum quality level and to control this from the very first stages of developing the new products. The already-achieved comprehensive standardization for the manufacturing of a number of types of production and technical products and consumer goods has shown its high effectiveness and positive impact on the quality of the end product with a significant savings of material resources, manpower and time. Programs for comprehensive standardization require the elaboration of a significant number of new standards and involve the activities of a large number of scientists and specialists. Thus, the comprehensive "Cotton" Program presupposes the creation of more than 300 standards, involving over 20 ministries and 28 scientific research institutes and laboratories. The measures to improve the economic mechanism envisage that the USSR State Committee for Standards [Gosstandart] together with the ministries and departments complete by 1981 the elaboration of comprehensive standardization programs for the major types of consumer goods, at the same time significantly increasing the demands on product quality. By the beginning of 1980, 142 comprehensive standardization programs had been adopted, including 75 for machine building products and 45 for consumer goods. But a great deal of work must be done in order to put these programs into operation. In particular, it is essential to work out and approve over 3,600 State Standards and around 4,000 sectorial standards and technical conditions.

A new aspect in the development of standardization is the rise of such a form as long-range or anticipating standardization which sets the quality indicators which can be achieved after a certain time. These standards set graduated times for an improvement in product quality during industrial production. There is no necessity to introduce a long-range standard immediately into production. Its significance is primarily in that it serves as a guideline for the developers of new equipment.

CEMA standards are being evermore widely used in our industry. They are compulsory and are provided for in the legal contractual relationships relating to economic and scientific-technical cooperation. In addition, the designated standards can be employed in the national economy of the CEMA member nations directly as national standards. What does this provide? Above all it accelerates the introduction of advanced experience in improving product quality. The CEMA standards, as a rule, are worked out by that nation where the production of the given product is most developed, and the indicators set in the standards should meet the level of the world standards and in the necessary instances surpass them. Furthermore, expenditures are substantially reduced on working out the standards and the time for introducing them in industry is shortened by 1.5-2 years.

The use of international standards is also very promising. At present the recommendations of the International Standardization Organization (ISO) play this role. The USSR is an active member of this organization. Its recommendations are formally not compulsory, but in commercial-economic and scientific-technical cooperation, they, in essence, are the basic technical normative document. The use of international standards helps to improve the quality and competitiveness of products on the world market and provides an additional incentive for the more energetic development of the best achievements of world science and technology, for intensifying scientific research and for a qualitative growth in production potential.

An important area of activities related to improving product quality and directly involved with management, planning and standardization is state certification. This serves as a means for improving the technical level and quality of the products, the improving of their production methods and organization, an all-round objective assessment of the technical level and quality of the products, a further broadening of the production of high-quality products and a systematic renewal of the products. At the end of 1979, the USSR Council of Ministers approved a decree on further strengthening the role of certification for industrial products in increasing their technical level and quality. In June 1980, the Gosstandard, the GKNT and the USSR Gosplan approved the "Procedure for Certifying Industrial Products for Three Quality Categories." The designated documents are directly related to the measures of improving the economic mechanism.

Certification assumes an assessment of a constantly produced industrial product which determines the specialization of the ministry (department). The list of such products is approved by the manufacturing member with the agreement of the corresponding departments (the Gosstandart, Gostroy, Gossnab or Ministry o. Trade). Excluded from certification are: products which have not undergone industrial processing (petroleum, coal and the ores of ferrous and nonferrous metals), food products, articles designed for defense needs as well as medicines, cosmetics, book products, works of art, crating and packaging and certain other products.

As was already stated, three quality categories are provided: superior, first and second. The superior category includes industrial products which in terms of the indicators of the technical level and other parameters surpass the finest Soviet and foreign achievements or meet them. These products, as a rule, are given increased guarantees by the manufacturer for durability, for reliability and other quality indicators. The first category should include industrial products which in terms of the indicators of the technical level and quality meet the modern

requirements of the standards (technical conditions), satisfy the demands of the national economy and the nation's population and are characterized by a stability of the indicators for the technical level and quality. The output of these products is based on the strict observance of production discipline and high production skill. The second quality category should include the industrial products for which the indicators of the technical level and quality do not meet modern requirements, which are obsolete and are to be modernized or taken out of production.

The work done in the area of product certification has fully confirmed its positive influence on improving product quality and has disclosed those areas for which it should be improved. In the first place, the introduction of certification has made it possible to employ a unified indicator for defining the scientific and technical level of the products produced in the nation. The specific consumer properties of the various types of articles have gained a general classification based upon one of the quality groups. Secondly, it has been possible to obtain a sufficiently objective notion of the actual level of product quality in the various sectors of industry, in the associations, enterprises, Union republics and oblasts. An analysis of these data not only indicates the organizational level of the work done to improve product quality but also makes it possible to disclose the factors which have caused the success of some and the lagging of others and to draw the necessary conclusions. Thirdly, certification provides an opportunity to greater encourage the manufacturing enterprises which have achieved the highest results in producing superior category products and intensify the sanctions for the production of obsolete products. Fourthly, product certification has become a most important element in controlling product quality on all levels of the national economy. The ministries and departments as well as the enterprises and associations now receive plan quotas which envisage an increase in the proportional amount of articles with the state Quality Mark in the total volume of sales for the output of these articles in physical units, as well as for taking second category products out of production. Product quality planning based upon product certification is of fundamental significance in the establishing and developing of socialist methods for the management of production generally and for controlling product quality, in particular.

At present the state certification system has been turned into a permanently operating mechanism for a planned rise in product quality. Virtually all industrial sectors and a predominant majority of the enterprises are covered by it. According to the data of the USSR Gosstandart, on 1 July 1980, the state Quality Mark had been given to 82,900 product types produced by 9,287 industrial enterprises. The proportional amount of this product in the total production volume was 15.3 percent.

Of substantial interest is a comparison of the growth rates for the total volume of industrial product with the rates at which the proportional amount of superior quality products has increased in it (see the table) [on following page].

The data of the table show that the proportional amount of articles given the state Quality Mark in industrial product exceeded in 1970-1979 the growth rate of the overall volume of industrial production by almost 7-fold. This convincingly confirms the regular nature of the rise in the quality of our industrial products.

It must be pointed out that, as analysis indicates, there still are many shortcomings in product certification. At times the certification commissions assign a

Growth Rates for Total Volume of Industrial Product and Proportional Amount of Superior Quality Product, %*

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Growth rate of total volume of industrial product	100	108	115	123	133	143	150	159	166	17[illegible]
Growth rate of proportional amount of superior quality product	100	108.3	166.6	291.6	483.3	541.6	641.7	733.3	1016.6	1150

*Calculated from: "Narodnoye Khozyaystvo SSSR v 1978 Godu" [The USSR National Economy in 1978], Moscow, 1979, p 116; "Narodnoye Khozyaystvo SSSR v 1979 Godu" [The USSR National Economy in 1979], Moscow, 1980, p 134.

superior quality category to product types which are far from the most progressive from the technical and economic viewpoint. Even more frequent are instances when the articles granted the state Quality Mark are not produced at all. There have also been phenomena when after awarding a product the state Quality Mark the conditions of certification and the requirements of the standards and technical conditions were violated, production stability was not achieved and so forth. In discovering such an instance, the USSR Gosstandart deprives the corresponding enterprises of the right to produce such articles with the Quality Mark.

A major drawback in the current certification practices is the fact that it is little linked with the plans for developing new equipment. Thus, according to the 1978 data, more than one-half of the new products was uncertified and of those that underwent certification only around 43 percent received the superior category. The reasons for such a situation, we feel, are rooted in the fact that in their technical policy the ministries are not sufficiently oriented at achieving the level equal to or surpassing the finest world analogues by the technical and economic parameters of the products being designed. A negative role is also played by the rudimentary nature of technical and economic information. The sectorial scientific and technical information services, as a rule, do not provide for the prompt receipt of data on the finest models of foreign products and the prices for them. There is even less information on innovations being prepared. Due to this, in a number of instances, new technology merely repeats the analogous products which have already been developed abroad and, consequently, by the moment of their mass output already lag behind the superior world achievements. It must be pointed out that the encouraging of the organizations which develop new articles has been too little differentiated depending upon the quality and effectiveness of the articles being developed by them and the degree of surpassing the existing or coming analogues.

An important aspect of product quality certification is its objectivity which excludes a narrow departmental approach to this. The most effective for this is a nondepartmental expert evaluation. The Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 points out to the USSR GKNT and to the

involved ministries and departments the need to define the procedure and dates for carrying out comparative expert evaluation of the technical and economic indicators for particularly important types of products being developed and production processes in the stage of the technical specifications and the end results. The latter is particularly important for the most objective evaluation for the quality of a produced product can be given only in operation. Both the decree also drew attention to the growing role of the state testing for the most important types of production, technical, cultural and domestic products. As of now five interbranch testing centers set up jointly by the ministries and Gosstandart are being operated as an experiment. At present it is a question of organizing a broad network of local organizations which would carry out state testing for all the major product types. Procedural leadership over the state product testing and the control over their execution have been entrusted to Gosstandart.

Economic Incentives for Improving the Quality of Production and Technical Products

In the range of measures aimed at further improving product quality, economic incentives have a special role to play. The 25th CPSU Congress pointed to the necessity of the more skillful use of economic levers and incentives in order to urge the enterprises and employees "to more quickly develop new types of products and produce high-quality products in the needed assortment."[4]

In the Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 approved for carrying out and developing the instructions of the 25th Party Congress and in the procedural documents based on this decree, the designated provision has gained further specific elaboration. Note, naturally, previous practice, its merits and shortcomings were considered in order to create the most favorable economic situation for increasing the output of high-quality products. The carrying out of the Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 will substantially improve delivery discipline and increase the significance of product quality (and the other quality indicators) in encouraging the production associations (enterprises).

A further improvement in price formation will play a significant role in strengthening the incentives of the production associations (enterprises) to manufacture high quality products. The Draft of the CPSU Central Committee to the 26th Party Congress "Basic Directions of Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" states: "to strengthen the incentive action of wholesale prices on improving product quality, accelerating the development of new highly efficient equipment and the replacing of obsolete...."[5] From the national economic viewpoint, the correct organizing of prices for products presupposes: a rise in the useful effect should outstrip the increase in the expenditures on its production and the price level; the wholesale price per unit of useful effect of a new product should be lower than the previously developed.

Present price formation practices provide an incentive for product quality primarily through a system of surcharges and rebates and through the special procedure for distributing the surcharges on products which have been awarded the state Quality Mark. The decree on improving the economic mechanism has substantially increased the significance of the surcharges and rebates. The procedure for applying them has been defined by the "Instructions on the Procedure for Setting Incentive

Surcharges on Wholesale Prices for New, Highly Efficient Production and Technical Products and Rebates on Wholesale Prices for Second Quality Category Products As Well As for Products Not Certified Within the Stipulated Time" as approved by the USSR State Price Committee in November 1979. Proceeding from this document, the incentive surcharge on the wholesale prices for new, highly efficient production and technical products is set depending upon the annual economic effect from the output and utilization of this product in an amount of from 0.5 to 1.25 of the profitability norm accepted in setting the prices for the given or analogous product group, but not more than 70 percent of the amount of the designated effect. The surcharge on the wholesale price for efficiency and quality is set for a period up to 3 years, and for particularly complicated products for up to 2 years. With the awarding of the state Quality Mark to the product within this time, the action of the designated surcharge is set for up to 4 years, and for particularly complicated products, up to 5 years. In considering that the greatest effect from increasing the technical level and quality of products is achieved when their creation and production are based upon inventions and discoveries, the amount of surcharge for such products is increased by 1.5-fold. If the enterprises or associations are deprived of the right to use the state Quality Mark, the action of the incentive surcharges on the wholesale prices is automatically halted and the deductions and economic incentive funds are reduced. A procedure has also been set for applying incentive surcharges with the reassigning of the state Quality Mark to the products. These can be applied in the same procedure under the condition of an improvement in the technical and economic parameters of the given product. But if the technical and economic parameters do not improve, then the amount of the surcharges and the time of their action are reduced by double.

A system of wholesale price rebates has been widely used for promptly taking obsolete articles out of production. The decree of the CPSU Central Committee and the USSR Council of Ministers provides that for products in the second quality category as well as for products not certified within the established time, a rebate is to be applied on the wholesale price totaling 50 percent of the total profit received from the sale of this product, and upon the end of the period for removing the product from production, the wholesale price rebate is set at the full amount of profit.

A procedure has also been established for the allocation of the additional profit (the total of the wholesale price surcharges) obtained by the production association (enterprise) from the sale of new, highly efficient products or products with the state Quality Mark: up to 70 percent of the profit goes to the economic incentive funds and the remaining portion is distributed equally between th unified scientific and technical development fund (YeFNTR) and the state budget.

There has been a substantial strengthening of the importance of such an economic lever as the deduction rates into the economic incentive funds. Beginning with the 11th Five-Year Plan, with a significant increase in the output of new, highly efficient products, increased rates are to be set for the formation of the economic incentive funds. Such rates (in percent of profit) are provided, as is known, for the growth of labor productivity and for a rise in the proportional amount of superior quality product in the total volume of product output. The procedure and the rates for forming the material incentive fund according to the second indicator are set by the "Basic Provisions on the Formation and Expenditure of the Material Incentive Fund and the Fund for Sociocultural Measures and Housing Construction (Incentive Funds) in 1981-1985 in Industry" as approved by the USSR Gosplan, the Ministry

of Finances, the Gosbank and Gosstrud [State Committee for Labor and Wages] and the AUCCTU in May 1980. The norms are set by the ministries for the associations and enterprises for each point (percent) of the proportional amount of superior-quality product in the total production volume. Here they proceed from what proportional amount of superior-quality product has been provided for in the control figures for the corresponding year of the five-year plan and what portion of the material incentive fund is to be sent to encourage the carrying out of this indicator for the group of production associations (enterprises). But if there is to be a reduction in the proportional amount of superior-quality product in the total production volume for the corresponding year, in comparison with the control figures, the material incentive fund for the enterprise (association) is reduced by 3 percent for each point (percent) of the designated reduction.

The production of new, improved products often entails significant initial outlays. Their incorporation in the costs can lead to a substantial rise in prices and to a situation where the purchasing of such products becomes economically disadvantageous. In this regard the necessity arises of providing special forms to compensate for the one-shot and additional expenditures to improve product quality. In the Tenth Five-Year Plan compensation was carried out from three sources: the centralized fund for the development of new technology, the unified fund for the development of science and technology and Gosbank credits. In the 11th Five-Year Plan, in accord with the Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, in the ministries and departments a unified scientific and technical development fund (YeFRNT) will be created. The YeFRNT, in addition to financing scientific research and engineering work and compensating for expenditures related to the development and introduction of new types of products and production processes, will also be used to cover the one-shot and additional expenditures to improve the quality, durability and reliability of the produced product in comparison with those set in the current State Standards and technical conditions for these products.[6]

The YeFRNT will be formed from deductions out of the planned profit of the scientific-production and production associations (enterprises) and organizations according to rates set for the ministry in percent of net product (normed), and in individual sectors in relation to the commodity product. In addition to this, as is provided for in the above-designated decree, the YeFRNT will receive a portion of the additional profit from the sales of new, highly efficient products and articles which have been given the state Quality Mark in an amount of one-half the residual profit after the deductions into the economic incentive funds of the associations (enterprises) and the scientific research, design and engineering organizations. Thus, the YeFRNT is to be formed solely from profit.

In working out the sectorial rates for the deductions from planned profit into the YeFRNT, it would obviously be advisable to differentiate them in such a manner that they depended upon the scientific and technical newness and quality of the product. Less should be deducted from the profit obtained as a result of selling superior quality product than from the output of first category articles. Moreover, a progressive scale of deductions could be set reflecting the degree of product obsolescence. This would mean, in essence, that the enterprises with a high share of long produced product would participate more in the creation of the YeFRNT. At the same time this would lead to a reduction in enterprise profit, including the profit

going to its economic incentive funds. This would create an additional incentive to improve produced products.

Of important significance for improving product quality is the decreed granting of the ministries and departments the right to make changes in the annual plans of the production associations (enterprises) upon their proposals, if the overall quantity of produced product is reduced in comparison with the established plan because of the development and increased output of highly efficient production and technical products of new consumer goods. This creates additional incentives for the production associations and enterprises to produce high quality products.

It is important to draw attention to the fact that in carrying out the Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, it is essential to strengthen the effectiveness of other economic levers as well. In particular, wider use must be made of such a financial lever as the turnover tax. It is advisable to reduce the turnover tax, and in the event of fixed prices, even to lift the turnover tax on superior quality products. Conversely, the turnover tax rate for second quality products, we feel, should be increased by 50 percent, and in individual instances even more. In this manner an additional barrier would be created against the creation of unreliable and poor quality goods. The role of the turnover tax would be further increased if the production associations (enterprises) became the sole enterprises which paid this. An experimental check on the designated proposals would make it possible to take into account the specific features of the various sectors and product types and work out a sufficiently effective mechanism for utilizing the turnover tax as a regulator of production profitability.

A further improving of payments and credit holds an important place in encouraging the enterprises to produce high-quality products. The effect of payments is manifested in granting the purchasers the right to make them after quality acceptance of the products and materials. Upon receiving instructions from the corresponding bodies to halt acceptance due to poor quality goods, the institutions of the USSR Gosbank, according to the current provisions, do not accept the demands for payments from enterprises producing these products, the list of payments under letters of credit or checks for goods the sale of which is prohibited. In detecting instances of the bypassing of bank control over product quality, the state bank offices halt the issuing of credit to the purchasers to pay for payment documents and for suppliers they halt the credits for payment documents en route (for the appropriate part).

The incentive role of credit is manifested in the granting of loans to introduce new equipment and expand the production of consumer goods. In instances when the enterprises will not fulfill the accumulation plant due to a reorganization of production carried out for the purposes of creating conditions to improve product quality and because of this will suffer a shortage of own working capital, the Gosbank institutions can grant a credit to make up such funds.

It is also essential to point out the stronger coordination of actions among the organizations of Gosstandart and the USSR Gosbank institutions. In the event of detecting violations of the requirements of the standards and technical conditions by the enterprises, the supervisory bodies of Gosstandart inform the bank of this. And in the instance of the nonreceipt of payments on the account of enterprises due

to the delivery of poor quality products, the Gosbank institutions inform the Gosstandart bodies of this so that measures can be taken.

As a whole up to now a rather developed system has come into being for crediting enterprises for measures related to an improvement in product quality. However, the possibilities of production progress and improving the quality of products through the improvement of payments and credit are far from exhausted. Their further improvement presupposes, from our viewpoint, the ratification of a group of measures, including the following: upon the receipt of initial poor quality materials (raw products) from suppliers, not to accept them for crediting; in crediting enterprises for loans against payment documents en route, not to grant a credit related to the production of poor quality products; the crediting of enterprises should be made dependent upon the course of product certification while the remains of products which should be certified but have not yet been certified should not be accepted for crediting. The enterprises which do not fulfill the quotas to remove from production or replace second quality products on the time set by the plan should not be granted credits for raw products, materials or incomplete production designed for the output of these products.

It would also be advisable to approve a number of other measures.

Strengthening the incentive measures for the producers of high quality products can provide the necessary effect only when combined with a system of material responsibility. In economic practice definite forms of enterprise responsibility have been established for producing poor quality products and for violating the standards. However, these do not fully correspond to the present conditions and tasks and are insufficiently reinforced by a system of economic sanctions. The most obvious shortcomings of the existing system include: the insignificant amount of the sanctions; the harm caused is not shown; the specific guilty parties do not bear proper responsibility. Until recently penalties for the delivery of poor quality products and for violating the standards were paid to a significant degree from the free profit balance. But the changeover to a normed distribution of profit between the enterprises and the state budget as envisaged by the Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, would lead to a situation where the penalties would be paid from that portion of profit which remains to the enterprise. This would immediately increase the effectiveness of material responsibility for the quality of the delivered articles.

Economic Incentives for Increasing the Output of High-Quality Consumer Goods

The Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 defines a range of measures to further encourage the production associations to improve the quality of consumer goods. We have already mentioned certain of these measures above (deductions into the incentive funds, the use of credit, increased responsibility and so forth) as they are analogous to the economic incentives for production and technical products. Here we will take up only the special measures relating to consumer goods.

Compensation for the additional expenditures related to an improvement in the quality of consumer goods is to be carried out from the enterprise funds as well as by establishing temporary increased wholesale and retail prices. The latter are to be

set for articles given the index number "N," that is, of improved quality, and having increased demand among the public. We have employed the temporary prices since 1962. Initially they were extended only to textiles, garments and knitwear, footwear and furniture. From the Tenth Five-Year Plan, they also began to be applied to a number of other consumer goods. The temporary prices are set for a period up to 18 months, but if the article is awarded the state Quality Mark, the period of the surcharge is extended for the entire period the mark is in effect. Some 70 percent of the total temporary surcharge on the retail price for adult products and 90 percent on children's goods remain at the disposal of the enterprise. Here 15 percent of the surcharge goes to pay bonuses to the workers directly involved in the creation, development and output of these articles.

For example, in light industry the temporary prices have been used to encourage the manufacturing of new, original models corresponding to the trend of fashion and in increased demand among the population. As a rule, these are articles of the superior quality category. The temporary prices also are used to encourage series output of a significant number of products. At the same time for studying and forming the demand for various consumer goods, it is essential initially to produce them in relatively small amounts. This applies primarily to particularly fashionable products. For encouraging their production, the decree on improving the economic mechanism makes provision for establishing contractual prices for the first experimental batches of goods and particularly fashionable articles.

The regulation governing the procedure for setting contractual prices for the first experimental batches of goods and particularly fashionable articles and on the differentiation of the trade rebates as established by the USSR State Price Committee and approved by the USSR Gosplan, the USSR Ministry of Finances and the USSR Ministry of Trade has established that the contractual retail prices for the first experimental batches of goods and for particularly fashionable articles can be set for the first produced high-quality goods with new consumer properties that differ substantially from the previously produced goods. The regulation specially states that the contractual retail prices cannot be set for previously produced goods the prices for which are set in the current price lists. One-half of the total monetary receipts obtained from the sale of the first experimental batches of goods and particularly fashionable articles is to remain at the disposal of the association (enterprise) and one-half paid to the budget. Some 30 percent of the total additional monetary accumulation left to the disposal of the associations (enterprises) is to go to pay bonuses for the employees of the production associations who have participated in the creation, the organizing of production and in the manufacturing of the goods for which the contractual prices are applied.

The Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 has strengthened the responsibility of the Ministry of Trade and the industrial ministries, associations and enterprises for the fuller satisfying of the demand of the public for consumer goods. For this purpose, it is to become a practice to conclude 5-year agreements between the main administrations of the Ministry of Trade and the industrial associations. These agreements will stipulate an improvement in the finishing and external appearance of the articles as well as set the contractual prices for particularly fashionable goods.

The role of the industrial ministries is to be increased in studying the demand for high-quality goods. The decree governing the improvement of the economic mechanism provides that the industrial ministries should develop a network of firm stores to sell consumer goods produced by departmental associations. The firm and other large stores will, as a rule, sell goods for which contractual prices have been set. Responsibility has also been established for the head industrial ministries producing cultural, service and household goods.

FOOTNOTES

1. "Proyekt TsK KPSS k XXVI S"yezdu Partii. Osnovnyye Napravleniya Ekonomicheskogo i Sotsial'nogo Razvitiya SSSR na 1981-1985 Gody in na Period do 1990 Goda" [Draft of the CPSU Central Committee to the 26th Party Congress. Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990], Moscow, 1980, p 17.

2. For more detail on improving product quality control, see: A. Glichev, "Orienting the Economic Mechanism to Improve Product Quality," VOPROSY EKONOMIKI, No 12, 1980.

3. "Proyekt TsK KPSS...," p 57.

4. "Materialy XXV S"yezda KPSS" [Materials of the 25th CPSU Congress], Moscow, 1976, p 60.

5. "Proyekt TsK KPSS...," p 89.

6. See: "Procedural Instructions on the Procedure for Forming and Utilizing the YePRNT (Approved by the USSR GKNT, the USSR Gosplan, the USSR Ministry of Finances and the USSR State Price Committee on 11 September 1979)," EKONOMICHESKAYA GAZETA, No 39, 1979, p 6.

7. Interesting material on the use of prices to encourage the quality of light industry products can be found by the reader in the article of Yu. Zhukov "Prices and the Encouraging of Product Quality in Light Industry," PLANOVOYE KHOZYAYSTVO, No 5, 1980.

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STRENGTHENING OF BRANCH INFRASTRUCTURE URGED

Moscow EKONOMICHESKIYE NAUKI in Russian No 2, Feb 81 pp 93-97

[Article by Candidate of Geographic Sciences B. Movchan and Candidate of Economic Sciences N. Chikovskiy of Leningrad Oblast: "An Integrated Approach to the Development of Infrastructure Sectors"]

[Text] The dynamic development of the national economy of our country and its regions requires the ever-greater strengthening of the intersectorial links of the national economic complexes which contribute to the most rational utilization of the natural wealth and the conservation of the environment and to the social servicing of the population at the point of its labor employment and residence. The improving of the entire system of social reproduction creates conditions for improving the production processes, management and the carrying out of other national economic and social functions on the basis of a unified infrastructure. As was correctly pointed out by V. Krasovskiy, "the infrastructure of socialist production, in developing on a planned basis, opens up...the broadest opportunities for the practical implementation of major scientific-technical solutions which help to sharply increase the mechanization and automation of production processes, to introduce automatic control systems which service ever-larger infrastructure elements...."

In recent years, interest in the problem of improving the management mechanism for infrastructure sectors has significantly increased. This is due to the fact that in many cities and large administrative rayons, comprehensive plans have been worked out for economic and social development. Their preparation and implementation has shown that with a territorial rayon- (city-) oriented approach to planning the integrated economic and social development there is an opportunity to mobilize additional reserves for increasing the efficiency of social production. This is achieved by integrated planning for the development of the infrastructure in a given territory.

What, in our view, comprises the particular features in assessing the activities of the infrastructure sectors under the conditions of the economic regions?

The first and main one of them is determined by the nature of shaping the sphere of activity for these sectors which presently include a multiplicity of management elements (ministries and departments). As a result, the basic areas for the development of the infrastructure sectors in the regions are determined by the

departments without proper correlation to the territorial requirements. There is no doubt that the absence of a specialized body (element) for managing the infrastructure sectors in the regions is the main factor, in particular, for the "atomization" of construction capacity. This leads to the "...unjustified duplication of power, transport and water supply projects and to the appearance of separate urban settlements which do not have the city-wide utilities,"[2] and as a consequence, to a reduction in the efficiency of social production.

The *second* feature which influences not only the level of production efficiency but also the development of the infrastructure sectors is the defining of proportions in the development of material production sectors and the infrastructure sectors. For better solving this complicated question, it is essential, we feel, to carry out extensive scientific research and this research should serve as the basis for elaborating the procedure for drawing up the long-range integrated development plans for the material production sectors and the infrastructure sectors. "It must not be forgotten," said Comrade L. I. Brezhnev at the 25th CPSU Congress, "that in the forthcoming period we must allocate greater resources for the accelerated development of transportation, communications and the material supply system, that is, everything that is called the infrastructure.... Now we must be concerned, seriously concerned with this."[3]

The *third* feature of comprehensive economic development of the regions is an improvement in the social infrastructure, by which we mean the system of organizations and institutions in the service sphere, housing and utility services for the population points. The integrated development of material production centers predetermines the closest link between the production and social infrastructures which function, as a rule, on a single utility and technical basis. The concept of the "infrastructure" brings together, in our opinion, a system of installations and utility-technical facilities primarily of intersectorial purpose and which service the processes of production, consumption and life support for persons on the given territory under the specific regional conditions. For this reason, along with the production infrastructure, in the system of social reproduction the social infrastructure has also assumed important significance. Both these systems bring together groups of sectors with a clearly expressed interrelationship in terms of the facilities served.

The practical aspect of the question consists in defining a unified approach to the shaping and integrated development of the production and social infrastructure sectors and to elaborate a system of enactments and standards for the proportional participation of the ministries and departments to allocate funds for the carrying out of construction work and to ensure the functioning of the intersectorial projects and systems. The carrying out of economic planning measures aimed at the integrated solution to regional problems is provided for by the procedural instructions on working out integrated economic and social national economic development plans for the country, the republics and oblasts (krays) and by the requirements for compiling the general long-range city development plans and working out the schemes for regional planning which regulate the development conditions of the industrial-production and agroindustrial complexes on a certain territory. However, the practical use of the existing procedural instructions and legislative enactments to a significant degree is restricted predominantly to a sectorial approach to the planning of national economic development, by the established

principles for working out the general city plans and the schemes for regional planning and by the legal provisions for financing the integrated development of the population points. All of this requires a further strengthening of the role and significance of the territorial state and planning bodies and the elaboration of procedures for territorial and sectorial planning for the development of national economic complexes and social systems. The USSR Constitution (Article 147) gives the soviets the right to exercise control "...over the observance of legislation by superior enterprises, institutions and organizations located on this territory" in the area of land utilization, environmental conservation, construction, the utilization of labor resources and the carrying out of all decisions taken by the soviets. Only a maximum concentration of the solution to the sectorial and territorial problems on a unified design basis will make it possible to realize a comprehensive approach to the development of the infrastructure sectors. Here it is important to consider that the development of the infrastructure sectors and their territorial systems is characterized by several formative levels in accord with the objectives and requirements of socialist expanded reproduction. In our opinion, three such levels must be established: the state-wide, regional and local.

The state-wide infrastructure. From the very first days of socialist construction, our nation has shaped the main directions for the development of energy and transportation and these have led to the formation of a centralized system of power supply and a unified transport system. At present the creation of a state-wide automated system for national economic accounting, planning and management is being completed. Other types of infrastructure macrosystems are being developed and these are confronted with state-wide tasks in the area of the development and rational utilization of natural resources, centralized power supply and the prompt ensuring of transport systems and improving the entire system of the state and economic management of the nation. The further development of these systems is being carried out under comprehensive state-wide programs on the basis of long-range forecasts with the participation of numerous scientific research and design intitutes and specialized construction organizations. Such programs are presently being employed to carry out the construction of the Baykal-Amur Mainline, to improve the soils of the Poles'ye and Nonchernozem zone of the RSFSR, and to construct the high voltage power transmission lines, the large-diameter gas and oil lines and other utility and technical projects of a state-wide and interregional scale.

The regional infrastructure. Within the large economic regions of the nation, a regional level of infrastructure systems is being formed and developed on the basis of large power installations (GES, TETs and AES), transport junctions and water arteries, hydropower projects and irrigation systems. An important addition to this system is the network of base warehouse facilities for material-technical supply and product sales of the territorial administrations of the USSR Gossnab, the USSR Ministry of Agriculture and the other ministries and departments. Under the conditions of the planned management of the economy, the basic portion of infrastructure elements in the large economic regions certainly is also part of the state-wide infrastructure systems. However, on the regional level, the role of the sectorial ministries and departments is significantly strengthened as they settle many problems related to the joint construction of infrastructure projects and their placement. The basis for the planning of the regional infrastructure is the general development schemes for the national economic sectors and the general plans for the development of the industrial centers, particularly during their formation

in new areas where natural resources are to be tapped. The placement of such production and infrastructure formations is determined by the tasks of the most rational development and placement of the nation's productive forces in each economic region.

The basic provisions in the overall concept of regional national economic development are worked out by the councils for the study of the productive forces of the nation under the USSR Gosplan and the Union republic gosplans.

The local infrastructure. On the basis of the oblasts (krays), autonomous republics and individual major cities, local infrastructure systems are formed and their activities are most directly linked to the serving of the specific production and social projects. On this level, in our opinion, there occurs one of the most complicated processes of coordinating the sectorial and territorial problems related, as was mentioned above, to not only ensuring the functioning of the material production projects but also providing the necessary level of amenities for the life and activities of the population and for the integrated social and economic development of the individual population points. These factors are characterized by a varying level of the concentration of production and nonproduction facilities, by the varying size of the population living in the population point and its sociodemographic structure. Here also arise problems related to the financing of construction of infrastructure projects when this construction is carried out by budget-supplied and departmental capital investments and other sources, including the private savings of the citizens.

On the designated level, in parallel with the general economic questions, one must also settle such social problems as ensuring comprehensive services for the rural and urban population. The existing system of settlement is characterized by a large number of rural population points the development of which up to the present has been determined on the principles of cooperative and kolkhoz construction. Many settlements virtually do not have the essential social infrastructure facilities. In the population points a process is underway of eliminating the differences between the elements of the production and social infrastructure. These elements are reflected in the activities of the power systems, transport, water supply, sewage and other types of utility technical facilities and networks the services of which are equally used by the industrial and utility enterprises and the population itself.

As the individual population points develop, the formation of the local infrastructure systems more and more becomes established as independent sectors of the municipal economy which is run independently or is budget supported. In this manner conditions are created for the more efficient placement of new enterprises and they are put into operation on an already completed infrastructure basis thereby contributing to the intensive development of the large cities. This process reflects not only the influence of the infrastructure sectors on the development of social production, but also the necessity of taking the appropriate economic measures to utilize the assets of the enterprises to increase the share of their participation in the development of the local infrastructure systems. Undoubtedly, the general plans for urban development and the schemes of regional planning should serve as the basis for determining the basic directions in the development of the local infrastructure systems. In working out these plans and schemes

consideration should be given to all the regional features in the development of the local projects. Under the new conditions the coordinating of the technical and economic indicators for the urban development and socioeconomic tasks on a unified methodological basis is the basic task in the integrated planning of economic and social development of the national economy.

Ensuring an integrated approach to the development of the infrastructure sectors should be carried out in the two main areas: from the standpoint of solving the state-wide tasks which determine the macrostructure elements of its systems and from the standpoint of the local centers and administrative territories which define the microstructure elements of its systems under the specific regional conditions for achieving the general aim in the development of the entire socialist society.

FOOTNOTES

1. V. Krasovskiy, "On the Question of the Infrastructure of Social Production," KOMMUNIST, No 6, 1978, p 88.

2. Ibid., p 94.

3. "Materialy XXV S"yezda KPSS" [Materials of the 25th CPSU Congress], Moscow, 1976, p 44.

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ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

KIPERMAN REVIEWS BUNICH'S BOOK ON SOCIALIST MANAGEMENT

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/Review by G. Kiperman, chief of a sector of the Scientific Research Institute of Planning and Norms attached to USSR Gosplan, and D. Ukrainskiy, deputy chief of a department of USSR Gosplan, of the book "Khozyaystvennyy mekhanizm razvitogo sotsializma. Sushchnost', struktura, problemy i perspektivy" (The Economic Mechanism of Mature Socialism. The Essence, Structure, Problems and Prospects) by P. G. Bunich, Moscow, "Nauka", 1980, 351 pages/

/Text/ In the book being reviewed the problems of the economic mechanism are thoroughly studied; in many instances the peculiarities of its individual elements are revealed in interconnection in a new way. The author shows the contradictions of objective reality, which have affected the economy of the country.

A description of the economic mechanism of management as an objective economic category, as a block system of the model of the economic mechanism is given in the first section--"The Essence, Structure and Peculiarities of the Economic Mechanism of Management at the Present Stage."

The description of the goals of the socialist economy, which have been elaborated by the economic mechanism, and of the means of achieving them is given in the book on the basis of the premise that each law has its own direction, its own function or goals, as well as suggests means of achieving it. The author groups with the latter the nature of the movement of productive forces and the commodity form of the direct national product. Such an approach to the problem will seem at first glance unusual and strange for perception, since it is customary to believe that the means of achieving goals are in the sphere of our influence, while the nature of the movement of productive forces, which is characteristic of socialism, does not depend on us. It would have been more correct, in our opinion, to speak in this case not about the means, but about peculiarities which are objectively inherent in the socialist mode of production and govern the achievement of the set goals.

In this work the components and fundamental peculiarities of the economic mechanism, its main attributes and features are revealed for the first time in economic literature. Only the assumption about the trait of a self-developing system, which, in the opinion of the author, is inherent in the economic mechanism, requires, in our opinion, refinement. It is correct in the sense that the economic mechanism is constantly improving. But it would be erroneous to presume that this

process occurs automatically, spontaneously: it is under the direct influence of the implementation of the decisions of the Communist Party and the socialist state on the improvement of the economic mechanism, which the author himself discusses.

Using the example of cost accounting it is convincingly shown in the book that all the elements of the economic mechanism should reflect the actions of the system of laws in their interconnection, and not of some individual law. At the same time the erroneous views of cost accounting, which in the end lead to the unjustified opposition of cost accounting to the plan and to its identification with decentralization, are justly criticized.

P. G. Bunich sees the essence of cost accounting in self-financing and stimulation which is based on it (p 43). The concise statement artificially narrows the content and significance of cost accounting. An integral component of it is the comparison of the expenditures with the results, which it is necessary to introduce in the definition of cost accounting. Otherwise the concept of intraplant cost accounting will have to be rejected, since there is no element of self-financing in it, and the stimulation of the subdivisions of enterprises will have to be separated from the results of their economic operations.

The economic mechanism of mature socialism is the system of socialist management, which includes the management of the economy as a separate function of management and the production relations which are directly connected with production. The author characterizes the interrelationship of administration with management, the common nature and differences between them.

In the work it is correctly noted that the economic mechanism of the management of the socialist economy by its nature is optimal. It is a matter of the potential optimality, the approximation of which is also a task of the improvement of the economic mechanism.

The author represents the structure of the economic mechanism by a block system of interconnected models, which reveals the systems and elements which ensure its functioning. This idea, no doubt, is fruitful, it made it possible to reveal the content of the mechanism of management precisely as a system.

"Horizontally" the economic mechanism includes three groups of subsystems: the general functional subsystems, the special functional subsystems and the support subsystems. The subsystems of the plan, "stimuli," "obstacles" and "responsibility," management on a real time scale, socialist competition and others are grouped with the first. The composition of the other groups is also revealed consistently.

Of the functional subsystems, the subsystem of the plan is studied especially thoroughly and in detail.

In examining the composition of the models of the economic mechanism "vertically," P. G. Bunich proceeds from the traditional sectorial structure of the subsystems, replacing them with a linear-sequential structure which reflects the main stages of the cycle of the creation and "vital activity" of the product: the subsystems of basic scientific research, applied scientific development, planning, designing and so on. Such a system of relations seems successful, although it is to a significant extent more ideal than realistic.

While noting that republic associations can organize their activity according to the principle of industrial associations, the author believes that these highest links of sectorial management thereby "descend" to intermediate links. Such an interpretation seems debatable to us: for republic associations are endowed with the rights of industrial associations in addition to the rights of the highest links of sectorial management, and not instead of them.

Examining in detail the role of the production association in the system of management, P. G. Bunich correctly characterizes it as the primary link of the economically discrete optimum economic concentration of production. But following this, apparently, it should have been admitted that many associations for the present do not meet this requirement.

In analyzing the peculiarities of the economic mechanism of management at the present stage, the author reveals the essence and fundamental direction of the measures being implemented on its improvement and substantiates the need for the gradual approximation of the model which corresponds to the greatest extent to mature socialism.

The second section of the work is "A High Level of Production Efficiency as the Most Important Demand on the Functioning of the Economic Mechanism." It covers a group of problems which are connected with the definition of the concept of economic and social efficiency, the role of prices in the increase of production efficiency, the special indicators and general indicator of efficiency, the correlation of physical and value indicators under socialism and the emerging (rather, the purposefully forming) tendency toward the more complete reflection in the cost of a product of all the expenditures on its production. The study of these problems is of unquestionable theoretical and practical importance.

The author characterizes the economic optimum by absolute and relative indicators of efficiency. The substantial approximation of the optimum distribution of resources among sectors and within them reflects the tendency toward optimum planning. In other words, it is a matter of the law of the equalization of the rates of return among different enterprises within the sector, among sectors and regions of the country and so on.

While correctly noting the adverse consequences of "the complacent application of the expenditure principle in pricing" and the need to take into account the effective impact for the consumer, the author at the same time does not indicate that with the implemented wholesale price revision a definite step has been made in this direction.

It is impossible not to agree with the basic stand of P. G. Bunich on the problem of the correlation of physical and value indicators under socialism. He validly considers impermissible the opposition of physical indicators to value indicators or vice versa. Only one approach is scientific--their rational combination. But at the same time against the background of the minimization of the role of physical indicators in the evaluation of the operation of enterprises, which has happened over a number of years, the overcoming of this shortcoming is now objectively necessary.

The set of suggestions of the author on the more complete reflection in the cost of a product of all the expenditures on its production seems valid.

The third section of the book--"The Subsystem of the Plan Is the Leading Subsystem of the Economic Mechanism of the Management of the Socialist Economy"--covers the problems of the stimulation of stepped-up plans and high end results, the formation of plan indicators, economic standards and regulations, as well as indicators of the evaluation of the activity of cost accounting collectives. Here a positive assessment is given to the implementation of measures on the improvement of the economic mechanism and their influence on the increase of production efficiency. Attention is directed to the problems which require solution at this time.

The question of selecting a principle of evaluating the activity of production collectives--the consideration of the degree of fulfillment of the plan regardless of its level or the consideration of the actual contribution to the economy and to the end result--holds a central place in the section. The author considers the second version to be the more preferable.

The advantages of this principle are obvious, but there are shortcomings, which P. G. Bunich does not indicate. It is impossible to reject the stimulation of the fulfillment of the plan. Therefore the main thing here, in our opinion, lies not in the opposition of these principles, but in finding their optimum combination. There is experience in this respect (for example, in the Ministry of Tractor and Agricultural Machine Building).

The author sees the solution to this difficult problem in the use of the indicator of the net profit (the calculation of the wage according to it) and other forms of incentives for the end cost accounting results of production. He notes that "the transition to such a method of evaluation is among the most complicated socio-economic problems" (p 209). It is presumed that the plan takes into account the influence of the factors which do and do not depend on the enterprise (perhaps not always entirely). Such an influence becomes one in "level," and if the factors are not differentiated, the objectivity of the evaluation of the operation of enterprises will be lost.

When speaking about the optimization of the system of plan indicators, P. G. Bunich legitimately emphasizes the importance of maintaining the indicator of sales in it. No matter how important other indicators may be, for example, the standard net output, they do not replace the indicator of sales. For the indicator of the standard net output does not affect the interrelations of supplies with clients.

It is impossible not to note the correctness and value of the criticism by the authors of the attempts encountered in the press to oppose economic methods of management to administrative methods and to minimize the role and scientific nature of the latter. Economic and administrative methods are economic in essence and administrative (mandatory) in form. In general the author considers the division of the methods of management into economic, administrative, organizational-executive and ideological to be not entirely accurate, proposing to replace it with another principle of division--subject to the goals, at the achievement of which the influence is aimed.

The fourth section of the book--"The Subsystem of Stimuli, 'Obstacles' and Responsibility"--covers the problems of cost accounting methods of operation at all levels of the management of the sector, the use of the wage as an economic stimulus, the essence, mechanism and conditions of the development of cost accounting self-financing in a planned economy.

P. G. Bunich substantiates the expediency of the maximum synchronization of the functions of cost accounting at all levels, which ensures the organization of a unified system of cost accounting relations. The principles of the comparison in monetary form of the expenditures and results should be observed at all stages of the technological cycle. Therefore, he considers it necessary to base internal cost accounting on the indicator of the profit, which "unlike the cost reflects not only the expenditures, but also the results, and therefore is a most complete, summary indicator of efficiency" (p 269).

The author was able to find many new and significant arguments in favor of the use of the profit in internal cost accounting. But it would be premature to consider the matter resolved. The conclusion: when the use of the profit in internal cost accounting is useful, it is also necessary, seems to us to be the optimum here. But in other cases its replacement by the indicators of the cost and others is not ruled out.

Some tasks of improving the cost accounting methods of operation in the highest and internal links are characterized thoroughly in the monograph. The suggestions of the author do not arouse objections, except for one: in the list of approved indicators, which is recommended for production units, the volume of the standard net output is lacking. This is especially strange, as the author proposes to establish the standard of the wage per ruble of the standard net output.

P. G. Bunich considers the linking of the wage with the standard net output to be a positive step. At the same time the standard net output is not always truly the end result, it can also reflect the intermediate result (when the output has been produced, but has not been sold). Then, in the opinion of the author, it is necessary to attempt to calculate the net output with respect to finished and sold items. In principle this suggestion is feasible: it is possible with equal success to determine the standard net output as applied to the composition of the commodity output, as is now done, or the sold output, as P. G. Bunich suggests. But here the use of the indicator of the standard net output for planning labor productivity will be complicated.

Of course, in a book devoted to such complicated problems it is difficult to avoid some shortcomings. A number of the examined questions remain debatable in spite of the line of reasoning cited by the author. Unsuccessful formulations are encountered. For example, the author calls the maximum percentage of short deliveries the coefficient of the permissible nonfulfillment of the agreed products list. It is impossible to agree with this. The violation of contractual discipline is impermissible and punishable, but the extent of the punishment depends on the amount of the short deliveries (above or below the maximum percentage).

In a number of cases, in our opinion, the selection of sources of information should have been approached more exactingly.

At the same time the reader will unquestionably find in the book much of interest on the theoretical level and a number of important practical suggestions.

The reviewed book of P. G. Bunich is an important contribution to the study of the problems of improving the economic mechanism at the present stage of the development of our economy.

7807
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ECONOMISTS CALL FOR BETTER ECONOMIC FORECASTING

Moscow EKONOMICHESKIYE NAUKI in Russian No 2, Feb 81 pp 40-48

[Article by Prof and Doctor of Economic Sciences V. Lisichkin, O. Ugurchiyev and P. El'man: "To Improve the System of National Economic Forecasting"]

[Text] The solving of the problems posed by the 25th CPSU Congress, by the plenums of the CPSU Central Committee held between the 25th and 26th party congresses and by the Decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Effect of the Economic Mechanism on Raising Production Efficiency and Work Quality" requires a further rise in the level of planning and the bringing of it into accord with the needs of the intensive development of the national economic complex.

The national economic complex is a very involved system of scientific-technical, production-technological and socioeconomic ties. This system is characterized by its stochastic, dynamic and hierarchical nature, by spatial extent, by dispersion of the enterprises, by growing technological complexity of production and by the intensive development of regions with difficult and largely severe natural-climatic conditions (the north of the European USSR, Siberia, the Far East and the zones of semideserts and deserts in Central Asia). Planning and management decisions in all elements of the national economic complex are taken under conditions which do not exclude elements of ambiguity. Scientifically sound forecasts must be recognized as the basic instrument for overcoming the negative consequences related to this. The forecasts are the planning bodies with materials making it possible, on a basis of the reliable prediction of the prospects, to work out plans which are thoroughly sound and conform to the long-range strategic course in national economic development. Here the dates, volumes and numerical characteristics indicated in the forecast have a probability nature and without fail provide the opportunity of adjustments. The latter should be made at any time when such a necessity arises. This is provided by the continuity of the process of forecast elaboration. It is also important that their effectiveness is achieved only when there are several forecast variations for the same event. In a multivariant forecast it is possible to consider the entire spectrum of probable changes in those conditions which operate on the forecasted process. As these changes are manifested ordinarily there is a transition from one variation of the forecast to the next while constantly maintaining the possibility of optimum control over the process.

The present stage of economic development in our nation is characterized by a significant increase in the productive forces, by accelerating rates of scientific and technical progress and by a continuous rise in the role of the scientific organization of labor and management. The latter, as is generally recognized, is becoming evermore complicated, and its successful realization entails a need to surmount definite objective difficulties. These are related to three groups of factors: in the first place, there has been a continuous rise in the amounts of information which must be processed for the taking of a management decision; secondly, under the conditions of the continuously changing medium and object of management, there is great ambiguity in choosing an optimum strategy for achieving the aims; thirdly, ever-stricter demands are being placed on the efficiency and synchronizing of the process of taking management decisions and the processes occurring in the object of management. The Draft of the CPSU Central Committee to the 26th Party Congress "Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" points out: "The management and planning mechanism, the methods of management and the level of labor and executive discipline have lagged behind present requirements. This has impeded the conversion of the national economy to the path of intensive development."[1]

The surmounting of these difficulties at present is being carried out by utilizing mathematical economic methods, scientific forecasting methods and computers in the theory and practice of national economic management. Each of these ways envisages measures and methods by which, in preparing management decisions, there is not only an analysis of the past and current information on the object of management but also forecast data on alternative ways for the further development of this object in relation to the implementation of one or another possible decision. For this reason forecasting is a necessary function of a management body on each level of the management hierarchy.

The effectiveness of managing the national economy as a whole and its individual sectors depends largely upon how soundly and realistically the plan has been compiled and how fully the actions of the economic laws of socialism and the social demand for the products of each sector and the objective trends of its development have been considered. In practice, due to various reasons, the planning bodies have not always considered the designated groups of factors in the process of compiling the national economic plans. In his report "The Cause of Lenin Lives and is Victorious," Comrade L. I. Brezhnev pointed out: "Many of the complexities which we encounter in the economic area have their roots in various shortcomings in planning, in the imperfection of the plans as well as in their insufficiently precise fulfillment. For this reason, one of the most important tasks is to continuously improve planning methods and increase the scientific-technical and economic soundness of the plans, both current and long-range."[2] Under present-day conditions an increase in the soundness of the plans is impossible without broadening the horizons of planning, without raising the role of the five-year plan, without strengthening work in the area of forecasting and without more effective use of the results of this work in planning practices. For precisely this reason the Draft of the CPSU Central Committee to the 26th Party Congress "Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" has set the task of "strengthening the importance of the five-year plan which is the main instrument for implementing the party's economic policy."[3]

A plan, in contrast to a forecast, contains uniformly defined dates and conditions for carrying out a certain event. Due to the definition of the concept of a plan as a previously outlined system of measures which envisages a procedure, sequence and date for carrying out the work, a non-uniformity in any index of the plan leads to the instability of its entire "edifice." Because of this, for minimizing risk in drawing up plans, any nonuniformity is left to the forecasts, accepting for planning work only one variation which is the most rational one. Thus, the relationship of the designated categories can be represented as follows: a forecast is a preplanning study of multivariant models of events making it possible to draw up an actually feasible plan, in avoiding mistakes and miscalculations. The USSR and the fraternal socialist states have already gained significant practical experience in elaborating the national economic, sectorial and intersectorial forecasts. In our nation, under the leadership of the USSR Academy of Sciences, forecasts have been worked out which lie at the basis of the "Comprehensive Program for Scientific and Technical Progress and Socioeconomic Processes in the USSR" up to 1990. In 1970, for the first time the Provisional Scientific-Technical Commission under the USSR GKNT [State Committee for Science and Technology] worked out a comprehensive forecast for the development of automated control systems and computer technology up to 1990. Using special forecasting methods, forecasts have been made in the area of welding and welding equipment (Electric Welding Institute imeni B. Ye. Paton of the Ukrainian Academy of Sciences), forecasts for the development of air cargo shipments (the Ministry of Civil Aviation and the USSR Ministry of Higher and Secondary Specialized Education), forecasts for the development of heavy power machine building (the Ministry of Power Machine Building), forecasts for the development of construction and road machine building (the Ministry of Construction, Road and Municipal Machine Building), forecasts for the development of oil and gas construction (the Ministry of Construction of Petroleum and Gas Industry Enterprises) and a number of other major forecast studies. Certainly under present-day conditions there is not only a need for broadening and improving activities in the forecasting area but also the experience required for this. It is a question of generalizing this experience with sufficient thoroughness and drawing the necessary conclusions from this.

We feel that such conclusions should include an objective statement of the existing shortcomings in those instances where further successful development of forecasting studies and their use in planning practices would be difficult without overcoming these shortcomings. In speaking about the designated shortcomings in the theoretical and methodological area, we feel it advisable to point to the following ones: There is a lack of the necessary coordination of research and uniform procedural demands for the forecasts; as yet we have not created a system of procedural support and documents which would regulate the processes of continuous forecasting in the planning and management system on the various national economic levels; there is an insufficient level of elaborating the subsystems of forecasting and the ASU [Automated Management or Control System] for the various management levels; as yet there is still a weak link between the systems of forecast and planning indicators; profound integrated research has not been carried out in the area of forecasting the impact of scientific and technical progress on the condition of the environment. Moreover, as yet very little work has been done on the problem of assessing the reliability of the forecasts (the problem of verification). In actual terms none of the forecasts accepted on the sectorial or higher level contains an assessment of reliability although this involves economic actions entailing the expenditure of capital investments and resources running into the many billions of rubles.

There can be no doubt as to the exceptional importance of still another problem which has not been clearly solved, namely the effectiveness of the forecast studies. The significance of this problem increases even more with the transition from the elaboration of individual forecasts to a continuous planning--forecasting system. In touching on the *organization* of forecast research, it is essential to point to the absence of a unified scientific research center which would concentrate on the questions of the organization, management and coordination of research in the area of forecasting theory and practice. As yet we lack uniform legal organizational principles for the elaboration and use of the forecasts as well as expert surveys.

Great reserves for improving the system of national economic forecasting are to be found in the area of cadre potential. As yet there is no special system for training forecasting specialists, while the very fact of the need for such personnel specially trained proceeding from their specific tasks scarcely requires establishing. We must also recognize the insufficient treatment of the scientific principles and methods of forecasting in the process of training and retraining executive personnel in institutes and advanced training faculties. Likewise there is insufficient available training and procedural literature on the scientific principles and methods of forecasting.

In the area of *mathematical and information* support [software], we must point to the absence of integrated mathematical support for forecasting problems on a regional, sectorial and national economic level. This would include optimum systems for the models for the purpose of carrying out forecast research and classifying these models and recommendations in terms of their use. There is also a lack of a unified methodology for information support of the forecasts on a sectorial, regional and national economic level.

The designated shortcomings are most closely linked to the state of scientific studies which can be judged, in analyzing the existing literature.

For disclosing the most urgent forecasting problems, in 1977-1978, we carried out scientific measurement and questionnaire research on the basic development trends in forecasting theory and methodology. The questions in the questionnaires and the indicators of the scientific measurement analysis were formulated proceeding from the structurizing of forecasting problems accepted in theory.

The scientific measurement analysis carried out for 1979 on publications relating to the basic forecasting problems in 1968-1978 showed the following:

1) The problem of the analysis and synthesis of the object of forecasting was the subject of 13 percent;

2) The problems of working out new and modifying existing methods and procedures of forecasting and adapting the methods to the object--69 percent;

3) To the problem of forecast verification--7 percent;

4) To the problem of the synthesis of forecasting systems--11 percent.

For a number of reasons the works on specific sectorial forecasts were not included in the mass of analyzed publications.

Characteristically, only 7 percent of the publications went to the most unstudied problem of forecast verification, that is, virtually no scientific background work was done to solve it.

The reliability of the elaborated forecasts is largely determined by how correctly the forecasting method has been chosen. Each such method has a more or less definite area of use within which it is effective because of its specific features. The forecasting process includes the choice of a method as a necessary element and as an obligatory stage.

The presently-known socioeconomic forecasts significantly relate to extrapolation forecasts. One of the most important questions arising in creating such forecasts is the choice of the main forecasted features, the factors determining them and the time encompassed by the forecast. Then a dependence is set between the main feature and the factors comprising the model and for this the least square method and other methods of processing statistical data are employed.

Recently, the extrapolation method has been rightly criticized. Thus, the latter, as was pointed out by Academician B. M. Kedrov, proceeds from a false assumption according to which the same factors used as the basis for the approximation of the real trend of one or another growth curve continue to operate the entire time. From this it follows that the forecast possibilities for such a method are very limited, and are restricted to those limits within which the factors and parameters of the curve presently known to us can be considered to last. For this reason the extrapolation method produces completely acceptable results only in models of a short-term economic forecast (up to 1-5 years). Such models are oriented at a system of operational management and scientific and technical planning of production, and solve the immediate problems of forecasting the production volume and range, the dates for completing capacity and projects, the demand for resources and so forth.

For forecasting over a longer run as well as in working out forecasts for objects with limited initial information, heuristic methods are employed and these are based on the use of expert evaluations. The essence of such methods is that a specialist expert is given a certain program for the generation of questions related to the development of the forecast object. The answers of the expert are based upon his experience and intuition. The forecast is obtained after the corresponding processing of the replies by the experts. The shortcomings of such a method are rather obvious as the experts are not always objective.

The use of specific program methods combined with expert surveys is the most promising direction for improving forecasting in the national economic sectors. A specific development program for a sector or an intersectorial complex includes all of the measures needed to achieve the general aim of the sector, that is, the satisfying of the demand of the national economy for the products of the sector (in terms of volume and range) and for completing the projects at the designated time with minimum expenditures. In planning, as was emphasized by Comrade L. I. Brezhnev at the October (1980) Plenum of the CPSU Central Committee, "it is essential to widely use the specific program method. Each such program should represent a sound, calculation-based plan of measures aimed at the end result, at the solving of one or another problem. It is important that the program set the stages and sequence for the problems to be solved. And, of course, it is essential to have a system for

managing the program which would clearly establish personal responsibility for each area of work and grant the necessary rights. Without all of this a program is not a program but merely a sum of good intentions."[4]

Specific program forecasting considers the relationships of a sector with the other national economic sectors and assumes the creation and development of organizations which realize the general goal. The basic stages in elaborating the program model for forecasting the development of a sector include: the formulation of the primary problems and the choice of the general goal, the breaking up of the goal into problems, the formulating of the work and events to realize each stage, the establishing of technological and resource ties, consideration of the external ties, the formulation of alternatives and modeling the realization of the selected goal. The constructing of the forecast model is carried out in the process of questioning experts.

In the first stage the general goal is established. Then the experts determine the conditions for achieving it with an evaluation of their significance, probability of realization and resource intensiveness. For the realizing of these events, the experts put forward a number of new conditions and so forth up to the events which are presently realizable. As a result a "tree of goals" is formed and this is a network of events and work to realize the general goal. An investigation of the network is carried out using the experts and mathematical procedures, as a result of which the urgent problems of sectorial development are determined. This is the stage of the research forecast, a characteristic example of which would be the forecast worked out in 1970 for the development of electronic computers and ASU in the USSR. This encompassed the period up to 1990 and over the past decade (1970-1980) has been justified.

Then the task is to work out a program forecast. The purpose of this forecast is to provide an assessment for the possible ways of achieving the goal. The problem is solved by constructing the corresponding graph and assessing its parameter.

In the concluding stage of forecasting, an assessment is made of the labor, material-technical and financial resources as well as a range of organizational and technical measures which provide the ways to achieve the general goal.

As a result of processing the forecast graph and optimizing its parameters using mathematical programming methods, the variations are determined for resource allocation according to the types of work and ways for achieving the goal.

After breaking down the general goal, in the process of expert questioning, a list of events and work is drawn up the carrying out of which is essential to realize the goal as well as a rational technological sequence and possible variations for carrying them out at each stage. This makes it possible to forecast the development of the sector and its material-technical base for each alternative and to choose the most effective variation for the specific conditions. Precisely the programming forecasting models must provide the necessary information for the specific comprehensive programs. The Draft of the CPSU Central Committee to the 26th Party Congress "Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" has this to say about these programs: "To more widely use specific comprehensive programs as organic component parts of the state long-range plans for economic and social development, and to raise their

soundness and focus on the end results and the solving of specific scientific-technical, economic and social problems."[5]

In recent years forecasting based on the compiling of mathematical economics models (models of regression analysis, linear and nonlinear programming and so forth) has gained significant recognition, and this circumstance is of substantial significance for defining the ways to further improve national economic forecasting.

Due to the difficulties in simultaneously considering all of the operating factors, due to the absence of adequate primary information on them and the lack of a mathematical model of the required accuracy, planning is an iterative process which includes repeated calculations of plan variations with their subsequent analysis. The first variation of a plan, being acceptable for some indicators, as a rule, does not conform for other indicators to the requirements and conditions which are external to the system being planned. In order to satisfy the remaining external requirements, in the subsequent steps of iteration it is essential to alter the initial parameters thereby worsening the internal indicators. New plan variations appear and these successively come closer to the sought solution. This process continues until a variation is obtained which satisfies all the external conditions within the framework of the existing organizational limits.

It is possible to substantially raise the accuracy of planning and significantly reduce the number of iteration steps if one has beforehand the necessary data making it possible to determine the development trend of the object and its prospects in the future by employing scientific forecasting methods and using computers.

In line with the procedure for working out the national economic forecasts and in relation to the problems of improving this work, we feel it is advisable to say something about such a major area of mathematical economics analysis of the dependences in social production as the constructing and examination of production functions. A resorting to them will undoubtedly raise the scientific soundness of the forecasts.

A production function is, as is known, a mathematical economics equation linking variable amounts of expenditures with amounts of product (output).

One of the crucial moments in constructing and utilizing production functions is the choice of the mathematical form of the function. This is determined by a series of aspects both of a qualitative and a formal nature. The form of the function should satisfactorily reflect actual economic reality and the logic of production in the past, the present and the future. The specific type of the dependence of output upon the aggregate of all resources is difficult to establish even on a microeconomic level. This is all the more difficult to do for aggregated amounts where, in essence, the only reliable assumption is that output should increase with the growth of resource expenditures.

One of the most complicated problems in constructing production functions is the incorporation of the factors of technical progress. This is due primarily to the lack of acceptable indicators for measuring technical progress. Among the attempts to reflect technical progress using a value which would have concrete economic sense and be numerically measurable, one must point to the incorporation in

production functions of expenditures on the training and improving the skills of workers as well as on scientific research and design work. On the national economic level, these expenditures can be measured with the required accuracy. Technical progress cannot be represented as a chain of individual inventions and discoveries the planning of which is obstructed by the high degree of ambiguity or that the creation of fundamentally new equipment and production methods occurs discretely, in qualitative leaps. Technical progress is carried out and will be carried out in any forecasted period also as a result of a gradual improvement in existing equipment, as a consequence of corrections and improvement which ensure a constant rise in the scientific and technical level of production. This circumstance more closely links expenditures on technical development with its results and to a significant degree facilitates the management of scientific and technical progress and the formulating of a uniform technical policy. For this reason in macroeconomic production functions, this way of reflecting scientific and technical progress can be considered the most promising.

However, on the regional and sectorial levels, the level of accuracy drops substantially in determining expenditures on technical progress. The problem is that the training of personnel and research on a scale of the national economy as a whole are felt here. The allocating of the general expenditures produced here among the sectors cannot help but be significantly conditional. Due to the growing influence of random factors, the link of the expenditures on technical progress with the effect obtained due to these expenditures becomes looser on the sectorial level. Such difficulties are also characteristic for an individual enterprise.

As a result of analyzing the forecasting methods employed in national economic planning and management, we feel it is possible to point out a number of very important circumstances for further improving forecasting.

With the presence of a significant number of forecasting methods and procedures already known from the available publications, each organization which has been given an assignment to make a forecast endeavors to work out anew its own forecasting methodology and its own particular procedures. Such a dissipation of efforts and the repeated duplication of studies are a consequence, on the one hand, of the absence of a holding (library) of forecasting methods, algorithms and programs; on the other hand it is a result of the absence of an elaborated scientific approach to adapting the forecasting methods to the object. As a result the expenditures on the newly elaborated forecasts are repeated (at the same time one sectorial forecast costs an average of 90,000 rubles, while the cost of a multilateral forecast of the CEMA countries has been estimated at 110,000 rubles). Here a significant portion of the expenditures goes for the collection and primary processing of information which could be reused in related sectors.

One must also note the gap between the demand of the planning and management bodies for sound forecasts (plus the appearance of a "taste" for forecasts) and the lack of effective recommendations to employ the forecasts in the planning and management systems. This situation with the forecasts is very characteristic and in principle reflects the present stage of scientific development when there are numerous ideas and scientific studies but as yet not a sufficiently advanced mechanism for their rapid employment in production.

A further improvement in the methodology of socioeconomic and scientific-technical forecasting should, in our view, be carried out in the following directio a:

1) The elaboration of a logical-information and mathematical economics mechanism for utilizing the forecasts in the national economic plans, the specific programs and management system;

2) The elaboration and introduction of methods for verifying the scientific-technical forecasts in the aim of raising their soundness;

3) The formation of problem-oriented packets of forecasting procedures considering the needs of the consumers;

4) The creation of an intersectorial bank of scientific-technical forecasts and information for their elaboration;

5) The elaboration of methods for synthesizing the scientific-technical, socioeconomic and ecological forecasts;

6) The elaboration of procedures for adapting forecast models to the object and the procedures for selecting the forecasting methods.

The forecasts are worked out on the basis of one of the forecasting methods each of which has its merits, weak points and possible limits. Under the influence of scientific and technical progress, the optimum length of forecasting achievable by the same method ordinarily shows a tendency to decline. From this stems the urgent need to develop a system of continuous forecasting in which the individual methods would reciprocally supplement their capabilities, their reliability would be increased and in the process of the continuing cycle of work with the forecasts their correcting and greater accuracy would be achieved. Such a forecasting system based on the use of modern computers would be capable of supplying all management levels (the enterprise, association and ministry) with dependable forecast information which would be needed proceeding from the tasks of increasing the efficiency of national economic planning and management in the 11th and subsequent five-year plans.

FOOTNOTES

1. "Proyekt TsK KPSS k XXVI S"yezdu Partii. Osnovnyye Napravleniya Ekonomicheskogo i Sotsial'nogo Razvitiya SSSR na 1981-1985 Gody i na Period do 1990 Goda" [Draft of the CPSU Central Committee to the 26th Party Congress. Basic Directions for the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990], Moscow, 1980, p 9.

2. L. I. Brezhnev, "Leninskim Kursom" [By the Leninist Course], Moscow, 1970, Vol 2, pp 572-573.

3. "Proyekt TsK KPSS...," p 86.

4. L. I. Breshnev, "Rech' na Plenume Tsentral'nogo Komiteta KPSS 21 Oktyabrya 1980 Goda. Postanovleniye Plenuma TsK KPSS" [Speech at the Plenum of the CPSU Central Committee of 21 October 1980. Decree of the Plenum of the CPSU Central Committee], Moscow, 1980, p 12.

5. "Proyekt TsK KPSS...," p 86.

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ECONOMIST STRESSES INDIVIDUAL REGIONAL PROBLEMS

Moscow EKONOMICHESKIYE NAUKI in Russian No 2, Feb 81 pp 88-91

[Article by Prof, Doctor of Economic Sciences G. Zhil'tsov of Khabarovsk: "Regional Problems in Production Management"]

[Text] The economy of our nation comprises a single national economic complex which encompasses all elements of social production, the sectorial and territorial structure of the national economy and develops on the basis of a unified state plan.

Within the implementing of the function of managing the unified economic center of the nation, the necessity of combining sectorial and territorial planning increases particularly in solving major state-wide, intersectorial and territorial problems or in carrying out qualitative changes in the organizational structure of the national economic complex.

The system of the economic mechanism now being formed in accord with the decree of the CPSU Central Committee and USSR Council of Ministers of 12 July 1979 necessitates an improvement not only in the planning indicators, the forms and methods of planning and evaluating the activities of the production collectives of associations (enterprises) but also a further improvement in the structure of the planning and management bodies and a clarifying of their functions on the various national economic levels. The Draft of the CPSU Central Committee to the 26th Party Congress "Basic Directions for the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" poses the task of "improving the organization of planning, the structure, forms and methods of work of the planning bodies."[1] The solving of this problem is of important significance for the more successful harmonizing of territorial and sectorial planning.

The Draft of the "Basic Directions..." specially points to the necessity of "increasing the effectiveness of territorial planning and its role in the development of the regions."[2] The carrying out of these instructions is of primary significance for the integrated development of the regions, for the fuller utilization of their material and labor resources and for increasing production efficiency. With a correct combination of sectorial and territorial planning, all of this contributes to production progress in all the sectors of our economy.

At present, the territorial-production complexes (TPK) more and more are becoming an effective form for the territorial organization of production. Characteristic of the given form of the territorial organization of production is a number of given features, in particular: a high concentration level of production and capital investments; the presence of enterprises and associations from different sectors of the national economy which collaborate closely with one another; the development of a unified production and socioservice infrastructure. Proceeding from the existence of the designated common patterns in the functioning of any TPK, it is essential to utilize forms and methods of planning as well as indicators for the shaping of economic and social development which are common for all the TPK. At the same time in the formation and development of the individual TPK there are specific features related primarily to the natural geographic and historical factors of the individual economic regions. The problems which arise in the process of the formation and development of the TPK and in the individual economic regions are largely not identical. It cannot be otherwise, since there is a differing level of availability of labor, raw material and energy resources, and this influences the forms of expanded reproduction (capital intensive, energy intensive, capital saving or labor saving) and hence the capital investment structure as well. Precisely such specific features dictate above all the necessity of working out and solving the regional economic problems.

In accord with the Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 "On Improving Planning and Strengthening the Effect of the Economic Mechanism on Production Efficiency and Work Quality," the TPK formation and development programs should be included as one of the most important component parts in the state plans for the economic and social development of the nation. Thus, even during the Tenth Five-Year Plan, quotas were set for the development of the TPK of the Kursk Magnetic Anomaly, the Kansk-Achinsk Coal Basin, the Timan'-Pechora, Sayan, Pavlodar-Ekibastuz, Southern Tajik, Southwestern Siberian and others. The Draft of the CPSU Central Committee to the 26th Party Congress envisages the further development of a major TPK in the northwest of Siberia and the continued development of the Kansk-Achinsk and Southern Yakut TPK. Tasks have also been set for the further development of the Pavlodar-Ekibastuz and Southern Tajik TPK. The solving of these problems requires a profound scientific-theoretical and procedural study.[3]

The TsNIIP [Central Economics Scientific Research Institute] under the USSR Gosplan has drawn up procedural recommendations for improving the planning of TPK in formation (basic provisions). Here five sections have been established which reflect the development quotas for the following: Types of production which are specialized and directly related to the TPK; the production infrastructure; the social infrastructure; construction facilities; resource supply; capital construction.[4] In our view, the sections of the long-range plan represented in the recommendations and the corresponding indicators as a whole sufficiently fully meet the requirements. However they bring up the issue only of the tasks of planning and the contents of the planning indicators for the newly formed complexes. To a certain degree this is justified by the fact that at present the process of creating the TPK is being carried out primarily in the stage of their planned formation. At the same time it is essential to raise the question not only of the plan of formation but primarily an integrated TPK economic and social development plan. This is not a question of a mere formal adjustment. The problem is that any plan should

be oriented at achieving end goals. The selection of the region and the formation of an intersectorial structure of a production complex on its territory are only one of the component forms of activities relating to the unified process of the establishment and economic and social development of the TPK.

In the preparing and implementation of such plans, an important role is played by the central and planning bodies such as the USSR Gosplan, the USSR Council of Ministers and the Union republic councils of ministers, the ministries and departments. Success can be achieved only under the condition of the fullest coordinating of both principles of democratic centralism, a combination of centralized, sectorial and territorial planning, and an organic correlating of the departmental problems and programs with the interests of the economic and social development of a specific TPK or economic region. While in the initial stage of forming the TPK, when it is essential first of all to solve the problem of resource supply for capital construction, the basic role should be played by the central planning bodies of the nation, the management bodies on a level of the Union republics, the ministries and departments, as the complexes develop and function, the role of the territorial management bodies of a lower rank is constantly strengthened. In the sectorial plans (due to objective factors) it is impossible to fully reflect the problems of the integrated development of natural riches in one or another region, the reproduction and effective utilization of the labor resources, the creation of an optimum level and structure of a nonproduction infrastructure, a unified transport system and industrial construction facilities.[5]

In considering the growing role of science and education in the nation's economy, in planning the economic and social development of the TPK, in the section relating to the development of the production infrastructure it is essential to isolate indicators for the development of the sphere of science and scientific services, and quotas for the carrying out of scientific-technical programs, for the development and introduction of new machinery and mechanisms, progressive production processes and the types of products to be produced at the operating and newly built enterprises. In the section on resource supply, when it is a question of labor resources, it is essential to particularly set apart the indicators reflecting the full demand for specialists with a higher and specialized secondary education, considering the development prospects of material production and the nonproduction sphere. Here, naturally, it is essential to indicate the sources for satisfying the given demand both from graduates from the institutions of learning in the given region as well as the organized planned allocation of young specialists after the completion of schools in other regions.

This problem is a common one, however it has assumed particular urgency in the newly developed regions. The Draft of the CPSU Central Committee to the 26th Party Congress "Basic Directions for the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" recognizes the need to continue work on improving the conditions of personnel supply, particularly in the regions of Siberia and the Far East.[6]

In the process of the formation of the economic and social development of the TPK, in their structure an evermore significant role is being played by scientific-technical potential (the so-called territorial scientific-technical complex) which solves major interdisciplinary intersectorial territorial problems considering the

social needs and specific features in the development of the productive forces of one or another region. The creation and development of a territorial scientific-technical complex is of particularly great significance for the further development of Siberia and the Far East.

The carrying out of major intersectorial, regional specific programs is organically linked to the level of scientific and technical potential in those regions where these programs will be carried out. As is known, over the last 10-15 years, the scientific-technical potential of Siberia and the Far East has risen both quantitatively and qualitatively. At the same time, its growth rate and the achieved level cannot fully meet the increasing needs of the economy in these regions for scientific research design studies and highly skilled specialists. This applies primarily to the regions of the Far East. The presently developing scientific-technical potential in the regions of new development to a significant degree reproduces the shortcomings in the historically formed organizational structures of the scientific and technical potential. This is apparent primarily in a certain departmental separateness of the scientific and technical resources, including in the area of the training and retraining of personnel. Suffice it to say that in the Far East, and indeed in any other economic or administrative region, the scientific and design organizations, the higher and specialized secondary schools are under scores of different ministries and departments.

A major shortcoming is the fact that the forms and methods of planning and coordinating the scientific and technical work on a scale of the economic region and TPK sometimes are of a formal nature and do not provide a sufficient, comprehensive approach in examining the individual intersectorial territorial problems. To a significant degree this applies to the training of specialists in the higher and specialized secondary schools. Often to the detriment of social interests, each department develops "its own" scientific and scientific-technical structural subdivisions and opens additional special schools, faculties or courses for the training and retraining of specialists, without considering the existing potential of already operating scientific institutions and subdivisions, schools and the plant scientific sector in the given region and which is under other ministries and departments.

As was already pointed out, within the individual economic regions and TPK, there arises a broad range of not only general scientific-technical, organizational-economic and social problems but also specific ones for each region or TPK. Thus, considering the natural-climatic, geographic and a number of othe particular features and conditions for the integrated and accelerated development of the Siberian and Far Eastern economy, the reproduction and retention of a labor force in these regions have assumed exceptional importance. Also urgent are the regional problems of the investment policy, production efficiency, and in this regard the establishing of its specialization both considering the development of intraregional intereconomic cooperation as well as on the level of the unified national economic complex and the international economic ties. A comprehensive approach to the further development of the natural resources of Siberia and the Far East, due to the particular features of these regions, undoubtedly necessitates the elaboration and implementation of a special regional scientific-technical policy.

The carrying out of the designated and other urgent problems requires coordinated activities by all the structural units of scientific and technical potential and the establishing of rational relationships between them on a long-term basis. In accord with this, the integration of the scientific research, educational and technical processes in an organic link with production carried out within the TPK or the economic region should gain practical realization in the territorial scientific-technical potential (complex) and in its organizational-economic structure. The fullest realization of this is possible when the management of the TPK and its component structural elements, including the scientific-technical potential, is carried out by a unified territorial interdepartmental body granted the appropriate powers.

The territorial management bodies, together with the central planning bodies, the ministries and departments, should objectively establish the plan indicators for the economic and social development of the associations (enterprises), the scientific and design organizations as well as the higher institutions of learning comprising the TPK or the economic region, and exercise control over their fulfillment. It is reasonable to ask: Won't the regional forms and methods of production management lead to the development (or revival) of localist tendencies? Practice shows that the basic reason for the development of the latter lies not at all in the presence of the various regional management bodies, but rather in the employed system of planning indicators and criteria for evaluating the operations of the collectives of associations (enterprises), economic systems and regions. The orientation of production on the end national economic results and on satisfying the various specific social needs significantly reduces the danger of the development of localism and, incidentally, a departmental approach.

Among the most important functions of an interdepartmental territorial management body relating to the activities in the area of increasing the efficient use of the scientific-technical potential, one must mention first of all: the planning and coordinating of scientific activities relating to the most important areas of scientific and technical development within certain large interdisciplinary problems and programs; the development of the physical plant for the scientific and technical organizations and special schools and defining the ways for increasing its efficient use; the training and retraining of personnel for all levels and for all sectors of the national economy, including the sphere of science and education; the accelerated use of scientific achievements in production; the carrying out of measures related to the rational use of the natural resources and environmental conservation.

The solving of the problem of further improving territorial planning, due to its complexity and multiple aspects, undoubtedly requires a careful and thorough elaboration, and in a number of instances experimental verification of the proposed variations. It is indisputable that an improvement in the linkage between the sectorial and territorial sections of the plan objectively necessitates the strengthening of the territorial planning bodies and the broadening of their functions along with a rise in responsibility and a strengthening of planning discipline. For a number of key problems of an interdepartmental, regional nature solved within the economic regions and the TPK, it is essential to broaden the functions and powers of the head, special-problem (including regional) councils for the various sectors of scientific and technical knowledge, as well as the

directors councils. During the 11th Five-Year Plan, we must think out many other economic problems and find the correct and corresponding approaches to improving planning. Further research (closely related to practice) on the regional problems of the organization of socialist production here will play a major role.

FOOTNOTES

1. "Proyekt TsK KPSS k XXVI S"yezdu Partii. Osnovnyye Napravleniya Ekonomicheskogo i Sotsial'nogo Razvitiya SSSR na 1981-1985 Gody i na Period do 1990 Goda" [Draft of the CPSU Central Committee to the 26th Party Congress. Basic Directions for the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990], Moscow, 1980, p 87.

2. Ibid.

3. See: Ibid., pp 74-82.

4. See: PLANOVOYE KHOZYAYSTVO, No 9, 1979, p 89.

5. See: A. Aganbegyan: "The Territory and the Sectors," PRAVDA, 9 December 1979.

6. See: "Proyekt TsK KPSS...," p 17.

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